

APPENDIX B
SUBSTITUTE SHEETS

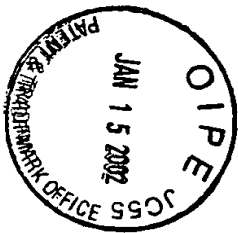


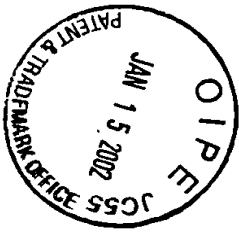
Table V. HLA Class II Standard Peptide Binding Affinity.

Allele	Nomenclature	Standard Peptide	SEQ ID	Sequence	Binding Affinity (nM)
DRB1*0101	DR1	515.01	2128	PKYVKQNTLKLAT	5.0
DRB1*0301	DR3	829.02	2129	YKTIAFDEEARR	300
DRB1*0401	DR4w4	515.01	2130	PKYVKQNTLKLAT	45
DRB1*0404	DR4w14	717.01	2131	YARFQSQTTLKQKT	50
DRB1*0405	DR4w15	717.01	2132	YARFQSQTTLKQKT	38
DRB1*0701	DR7	553.01	2133	QYIKANSKFIGITE	25
DRB1*0802	DR8w2	553.01	2134	QYIKANSKFIGITE	49
DRB1*0803	DR8w3	553.01	2135	QYIKANSKFIGITE	1600
DRB1*0901	DR9	553.01	2136	QYIKANSKFIGITE	75
DRB1*1101	DR5w11	553.01	2137	QYIKANSKFIGITE	20
DRB1*1201	DR5w12	1200.05	2138	EALIHQLKINPYVLS	298
DRB1*1302	DR6w19	650.22	2139	QYIKANAKFIGITE	3.5
DRB1*1501	DR2w2β1	507.02	2140	GRTQDENPVVHFFK NIVTPRTPPP	9.1
DRB3*0101	DR52a	511	2141	NGQIGNDPNRDIL	470
DRB4*0101	DRw53	717.01	2142	YARFQSQTTLKQKT	58
DRB5*0101	DR2w2β2	553.01	2143	QYIKANSKFIGITE	20

The "Nomenclature" column lists the allelic designations used in Tables XIX and XX.

Table XIX
CEA DR Super Motif Peptides with

Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	Position	DR1	DR2wB1	DR2wB2	DR3	DR4w4	DR4w15	DR5w11	DR5w12
IPWORLLT	1962	RWCIPWORLLLTASL	1815	10	0.6100	0.0110	-0.0007	0.0150	0.0830		-0.0005	
WORLLLTAS	1963	CIPWORLLLTASLT	1816	12								
LLLTASLI.T	1964	WORLLLTASLI.TFWN	1817	15								
LLTASLLT	1965	ORELLTASLLTFWNP	1818	16	-0.0004				-0.0022			
LTASLI.TFW	1966	RI.LLTASLI.TFWNPP	1819	17								
LTFWNPPT	1967	ASLLTFWNPPTAKL	1820	22								
FWNPPTAK	1968	LLTFWNPPTAKLTI	1821	24								
WNPPPTAKL	1969	LTFWNPPTAKLTIE	1822	25								
LTFTSTPN	1970	TAKI.TFTSTPNVAE	1823	33								
LLVHNLPOH	1971	EVLLVHNLPOHLFG	1824	50	2.5000	0.2300	0.0013	0.8900	0.8600		0.0340	
LVHNI.POH	1972	VLI.LVHNI.POHLFGY	1825	51								
YKGERVDGN	1973	YSWKYKGERVDGNROI	1826	65								
IGYVIGTO	1974	NROIIGYVIGTOOAT	1827	76								
IGTOOATPG	1975	GYVIGTOOATPGPAY	1828	81								
YSGREIYP	1976	GPAYSGREIYPNAS	1829	92								
IYPNASLL	1977	GREIYPNASLLION	1830	97	0.6200	0.3800	0.0024	0.2700	0.0930		0.0029	
IYPNASLI	1978	REIYPNASLI.IONI	1831	98								
LLIONION	1979	EIYPNASLLIONII	1832	99	0.3500	0.1600	-0.0007	0.1400	0.0390		-0.0005	
LLIONION	1980	NASLLIONIONDTG	1833	104	0.0011				-0.0022			
LLIONION	1981	ASLLIONIONDTGF	1834	105								
LLIONION	1982	IONIONDTGFYTLH	1835	109								
FTLHVKS	1983	DTGFYTLHVKSOLV	1836	116	0.0720	0.0180	0.0250	0.0013	0.0260		0.0080	
YTLHVKS	1984	TGFYTLHVKS.DI.VN	1837	117								
LHVKSOLV	1985	FYTLHVKSOLVNEE	1838	119								
IKSOLVNEE	1986	TLHVKSOLVNEEAT	1839	121				0.1300				
L.VNEEATGOF	1987	LHVKSOLVNEEATG	1840	122				0.0058				
VNEEATGOF	1988	KSDI.VNEEATGOFV	1841	126				-				
VPEL.PKPS	1989	SDI.VNEEATGOFV	1842	127								
ISSNNSKP	1990	OFRVPEL.PKPSISS	1843	137	0.0009				-0.0022			
VEDKDAVAF	1991	YPEL.PKPSISSNSK	1844	141	0.0021				-0.0022			
VNNOSLPVS	1992	KPSISSNSKPVEDK	1845	146								
LT.FNVTRN	1993	SKPVEDKDAVAFCE	1846	154								
VTRNDTASY	1994	YL.VVNNOSLPVS	1847	176	8.4000	0.0830	0.0095	0.1300	5.6000		0.7000	
VSARRSDSV	1995	LW.VVNNOSLPVSPL	1848	177	0.0230				0.0290			
VILNLYGP	1996	NRTI.L.FNVTRNDTA	1849	197								
YGPDAPTIS	1997	LFNVTRNDTASYKCE	1850	202								
ISPLNTSYR	1998	ONPVSARRSDSVILN	1851	218								
LSCHAASNP	1999	SDSVILNLYGPDAP	1852	226								
YGPDAPTIS	2000	LNVL.YGPDAPTISPL	1853	231								
YGPDAPTIS	2001	NVL.YGPDAPTISPLN	1854	232								
YGPDAPTIS	2002	APTISPLNTSYRSGF	1855	239								
YGPDAPTIS	2003	NLNLSCHAASNP	1856	254								
YGPDAPTIS	2004	OYSWFVNGTFOOSTO	1857	268								
YGPDAPTIS	2005	TOELFIPNITVNSGS	1858	281	0.0260	-0.0007	0.0033	0.0280	0.5600		0.0540	
YGPDAPTIS	2006	OELFIPNITVNSGS	1859	282								
YGPDAPTIS	2007	ELFIPNITVNSGS	1860	283								
YGPDAPTIS	2008	IPNITVNSGSYTGO	1861	286								
YGPDAPTIS	2009	NITVNSGSYTGOAH	1862	288								
YGPDAPTIS	2010	DTGLNRTITVITVY	1863	305	-0.0004				-0.0022			
YGPDAPTIS	2011	RTTITVITVYAEPPK	1864	310				0.0042				
YGPDAPTIS	2012	TITVYAEPPKPFITS	1865	315								
YGPDAPTIS	2013	KPFITSNSNPVEDE	1866	324	-0.0004				-0.0022			
YGPDAPTIS	2014	SNPVEDEDAVALTCE	1867	332				0.0054				
YGPDAPTIS	2015	NRTL.TLLSVTRNDVG	1868	375	0.0210				-0.0022			
YGPDAPTIS	2016	LLSVTRNDVGPECG	1869	380								
YGPDAPTIS	2017	RNDVGPYECGIONEL	1870	385								
YGPDAPTIS	2018	ECGIONELSVHSDP	1871	392								

Table XIX
CEA DR Super Motif Peptides with

Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	Position	DR1	DR2wB1	DR2wB2	DR3	DR4w4	DR4w15	DR5w11	DR5w12
LSVDHSDPV	2019	ONELSDHSDPVILN	1872	396				0.0820				
VHSDPVIL	2020	ELSDHSDPVILNVL	1873	398								
VILNVL	2021	SDPVILNVL	1874	404								
YGPDPPTIS	2022	NVL	1875	410								
ISPSYTYR	2023	DPTISPSYTYRPGV	1876	417								
YTYRPGVN	2024	SPSYTYRPGVNL	1877	421								
YRPGVNL	2025	SYTYRPGVNL	1878	423								
VNL	2026	RPVNL	1879	428								
SCHASNP	2027	NLSCHASNP	1880	432								
LIDNIOOH	2028	YSLIDNIOOHTOE	1881	447								
LISNITEK	2029	TOELISNITEKNSG	1882	459								
ITEKNSGLY	2030	OELFISNITEKNSGL	1883	460								
LYTCCOANS	2031	ISNITEKNSGLYTCO	1884	464								
VKTITVSAE	2032	NSGLYTCOANS	1885	471								
VSAELPKPS	2033	RTTVKTITVSAELPK	1886	488								
WVGOSLPV	2034	TITVSAELPKPSISS	1887	493								
VNGOSLPVS	2035	SAELPKPSISSNSK	1888	497								
LTLFNVTNR	2036	YLWVNGOSLPVSPR	1889	532								
VTRNDARAY	2037	LWVNGOSLPVSPRL	1890	533								
IONSVSANR	2038	NRTLTLFNVTNRDAR	1891	553								
VTLDLVLYGP	2039	LFNVTRNDARAYVCG	1892	558								
YGPDPPTIS	2040	VCGIONSVSANRSDP	1893	570								
ISPPDSSYL	2041	ONSVSANRSDPVTLD	1894	574								
LSGANLNL	2042	SDPVTLDVLYGPDTP	1895	582								
LSCHASNP	2043	LDVLYGPDTPISPP	1896	587								
WRINGIPOO	2044	DVLYGPDTPISPPD	1897	588								
IPOOHTOVL	2045	TPIISPPDSSYL	1898	595								
LFIKITPN	2046	SSYLSGANLNL	1899	603								
IAKITPN	2047	NI	1900	610								
YACFVSNLA	2048	NI	1901	624								
FVSNLATGR	2049	NI	1902	629								
VSNLATGRN	2050	NI	1903	637								
IVKSITVSA	2051	NI	1904	638								
VKSITVSA	2052	NI	1905	639								
ITVSAGTS	2053	NI	1906	650								
VSAGTS	2054	NI	1907	653								
LSAGATVGI	2055	NI	1908	654								
IMIGVLGV	2056	NI	1909	665								
LTIESTPN	2057	NI	1910	666								
YKGERVDGN	2058	NI	1911	669								
LPVSPRLQL	2059	NI	1912	671								
LNLSCHASNP	2060	NI	1913	680								
LPVSPRLQL	2061	NI	1914	688								
LPVSPRLQL	2062	NI	1915	33								
LPVSPRLQL	2063	NI	1916	65								
LPVSPRLQL	2064	NI	1917	182								
LPVSPRLQL	2065	NI	1918	252								
LPVSPRLQL	2066	NI	1919	538								

Table XIX CEA DR Super Motif Peptides with Binding

Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	DR6w19	DR7	DR8w2	DR9	DRw53
IPWQRLLT	1962	RWCIPWQRLLTASL	1815	0.0110	0.0700	-0.0004		
WQRLLLTA	1963	CIPWQRLLTASLLT	1816					
LLLTASLLT	1964	WQRLLTASLLTFW	1817					
LLTASLLTF	1965	QRLLTASLLTFWNP	1818		-0.0013			
LTASLLTF	1966	RLLTASLLTFWNPP	1819					
LTFWNPPT	1967	ASLLTFWNPPTTAKL	1820					
FWNPPTTA	1968	LLTFWNPPTTAKLTI	1821					
WNPPTTAK	1969	LTFWNPPTTAKLTIE	1822					
LTIESTPFN	1970	TAKLTIESTPFNVAE	1823					
LLVHNLQ	1971	EVLLLVHNLQHLFG	1824	3.4000	0.4700	0.1200		
LVHNLQPH	1972	VLLLVHNLQHLFGY	1825					
YKGERVDG	1973	YSWYKGERVDGNRQ	1826					
IIGYVIGTQ	1974	NRQIIGYVIGTQAT	1827					
IGTQQAATPG	1975	GYVIGTQQAATPGPAY	1828					
YSGREIYP	1976	GPA YSGREIYPNAS	1829					
IYPNASLL	1977	GREIYPNASLLIQN	1830	1.2000	0.5600	0.0083		
IYPNASLLI	1978	REIYPNASLLIQNI	1831					
YPNASLLIQ	1979	EIYPNASLLIQNI	1832	0.3100	0.1600	0.0029		
LLIQNIQN	1980	NASLLIQNIQNDTG	1833		-0.0013			
LIQNIQND	1981	ASLLIQNIQNDTGF	1834					
IQNDTGFY	1982	IQNIQNDTGFYTLH	1835					
FYTLHVIKS	1983	DTGFYTLHVIKSDLV	1836	0.0009	0.1100	0.0620		
LHVIKSDLV	1984	TGFYTLHVIKSDLVN	1837					
VIKSDLVNE	1985	FYTLHVIKSDLVNEE	1838					
IKSDLVNEE	1986	TLHVIKSDLVNEEAT	1839					
LVNEEATG	1987	LHVIKSDLVNEEATG	1840					
VNEEATGQ	1988	KSDLVNEEATGQFRV	1841					
VYPELKP	1989	SDLVNEEATGQFRVY	1842					
LPKPSISSN	1990	QFRVYPELKPSPSS	1843					
ISSNNSKPV	1991	YPPELKPSPSSNNSK	1844		-0.0013			
VEDKDAVA	1992	KPSISSNNSKPVEDK	1845		0.0033			
WVNNQSLP	1993	SKPVEDKDAVAFTCE	1846					
VNNQSLPV	1994	YLWVNNQSLPVSP	1847	1.5000	0.6000	0.0460		
LTFLNVTR	1995	LWVNNQSLPVSPR	1848		0.0082			
VTRNDTAS	1996	NRTLTLFNVTRNDTA	1849					
VSARRSDS	1997	LFNVTRNDTASYKCE	1850					
VILNVLYGP	1998	QNPVSARRSDSVILN	1851					
LYGPDAPTI	1999	SDSVILNVLYGPDAP	1852					
ISPLNTSYR	2000	LNVL YGPDAPTISPL	1853					
LSCHAAASN	2001	NVL YGPDAPTISPLN	1854					
WFVNGTFQ	2002	APTISPLNTSYRSGE	1855					
LFIPIITVN	2003	NLNLSCHAASNPPAQ	1856					
FIPNITVNN	2004	QYSWFVNGTFQOST	1857	0.0006	0.0270	0.0039		
IPNITVNN	2005	TQELFIPNITVNNSG	1858					
	2006	QELFIPNITVNNSGS	1859					
	2007	ELFIPNITVNNSGSY	1860					



Table XIX CEA DR Super Motif Peptides with Binding

Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	DR6w19	DR7	DR8w2	DR9	DRw53
ITVNSGSY	2008	IPNITVNSGSYTCQ	1861					
VNSGSYT	2009	NITVNSGSYTCQAH	1862					
LNRTTVTI	2010	DTGLNRITVTITIVY	1863	0.0088				
VTTITVYAE	2011	RTTITVTITVYAEPPK	1864					
VYAEPPKP	2012	TITVYAEPPKPFITS	1865					
ITSNNSNPV	2013	KPFITSNNSNPVEDE	1866	-0.0013				
VEDEDAVA	2014	SNPVEDEDAVALTCE	1867					
LTLTSLVTR	2015	NRTLTLTSLVTRNDVG	1868	0.0021				
VTRNDVGP	2016	LLSVTRNDVGPYECG	1869					
VGPYECGI	2017	RNDVGPYECGIQNEL	1870					
IQNELSVDH	2018	ECGIQNELSVDHSDP	1871					
LSVDHSDP	2019	QNELSVDHSDPVILN	1872					
VDSHDPVIL	2020	ELSVDSHSDPVILNVL	1873					
VILNVLVGP	2021	SDPVILNVLVGPDDP	1874					
YGPDDPTIS	2022	NVLVYGPDDPTISPSY	1875					
ISPSYTYR	2023	DPTISPSYTYRPGV	1876					
YTYRPGV	2024	SPSYTYRPGVNLSL	1877					
YYRPGVNL	2025	SYTYRPGVNLSLSC	1878					
VNLSLSCH	2026	RPGVNLSLSCHAAASN	1879					
LSCHAAASN	2027	NLSLSCHAAASNPPAQ	1880					
LIDGNIQOH	2028	YSLWLDGNIQOHTQE	1881					
LFISNITEK	2029	TQELFISNITEKNSG	1882	-0.0013				
FISNITEKN	2030	QELFISNITEKNSGL	1883					
ITEKNSGLY	2031	ISNITEKNSGLYTCQ	1884					
LYTCQANN	2032	NSGLYTCQANNAS	1885					
VKTITVSAE	2033	RTTVKTTITVSAELPK	1886	0.0050	0.0790	-0.0004		
VSAELPKP	2034	TITVSAELPKPSISS	1887					
LPKPSISSN	2035	SAELPKPSISSNNSK	1888	-0.0013				
WVNGQSLP	2036	YLWWVNGQSLPVSP	1889					
VNGQSLPV	2037	LWWVNGQSLPVSPR	1890					
LTLFNVTR	2038	NRTLTLFNVTRNDAR	1891					
VTRNDARA	2039	LFNVTRNDARA YVC	1892					
IQNSVSAN	2040	VCGIONSVSANRSDP	1893					
VSANRSDP	2041	QNSVSANRSDPVTLD	1894					
VTLDVLYG	2042	SDPVTLDVLYGPDTP	1895					
LYGPDTPH	2043	LDVLYGPDTPHISPP	1896	-0.0013				
YGPDTPIIS	2044	DVLYGPDTPHISPPD	1897					
ISPPDSSYL	2045	TPIHSPDSSYLSGA	1898					
LSGANLNL	2046	SSYLSGANLNLSCHS	1899					
LSCHSASN	2047	NLNLSCHSASNPSQ	1900					
WRINGIPQQ	2048	QYSWRINGIPQQHTQ	1901					
IPQQHTQVL	2049	INGIPQQHTQVLFIA	1902					
LFIKITPN	2050	TQVLFIAKITPNNG	1903	0.0038				
FIKITPN	2051	QVLFIAKITPNNGT	1904	0.0024				
IAKITPN	2052	VLFIAKITPNNGTY	1905					
YACFVSNL	2053	NGTYACFVSNLATG	1906					

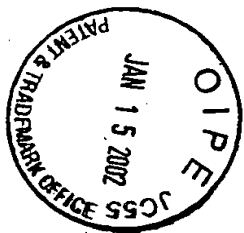


Table XIX CEA DR Super Motif Peptides with Binding

Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	DR6w19	DR7	DR8w2	DR9	DRw53
FVSNLATG	2054	YACFVSNLATGRNN	1907		0.0070			
VSNLATGR	2055	ACFVSNLATGRNNSI	1908					
IVKSTVSA	2056	NNSIVKSTVTSASGT	1909	0.0690	0.0370	0.0120		
VKSTVTSAS	2057	NSIVKSTVTSASGTS	1910	0.0460	0.0760	0.0170		
ITVTSASGTS	2058	VKSTVTSASGTSPGL	1911					
VSASGTSP	2059	SITVTSASGTSPGLSA	1912					
LSAGATVGI	2060	SPGLSAGATVGIMIG	1913					
IMIGVLGV	2061	TVGIMIGVLGVVALI	1914					
LTIESTPFN	2062	TAKLTIESTPFNVAE	1915					
YKGERVDG	2063	YSWYKGERVDGNRQ	1916					
LPVSPRLQ	2064	NQSLPVSPRLQLSNG	1917					
LNLSCHAA	2065	GENLNLSCHAAASNP	1918					
LPVSPRLQ	2066	GQSLPVSPRLQLSNG	1919					



CEA DR 3a Motif Peptides with Binding									
Table XXa		Exemplary Sequence		Exemplary SeqID Num		Position		DR1 DR2w281 DR2w282	
Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	Position	DR1	DR2w281	DR2w282	DR3	DR4w4 DR4w15 DR5w11 DR5w12
IQNDTGFYT	2067	QNIQNDTGFYTLHV	1920	110	0.0044	0.0105	-	0.3200	-0.0055 -0.0008
IKSDLVNEE	2068	LHVIKSDLVNEEATG	1921	122				0.1300	
LVNEEATGQ	2069	KSDLVNEEATGQFRV	1922	126				0.0058	
VNEEATGQF	2070	SDLVNEEATGQFRVY	1923	127				-	
VYPELPKPS	2071	QFRVYPELPKPSISS	1924	137				-	
FTCEPETQD	2072	AVAFTCEPETQDATY	1925	162				-	
YKCETQNPV	2073	TASYKCEQNPVSAR	1926	210				-	
YGPDAPTIS	2074	NVLYGPDAPTISPLN	1927	232				-	
VYAEPKPF	2075	TITVYAEPKPFITS	1928	315				0.0042	
VEDEDAVAL	2076	SNPVEDEDAVALTCE	1929	332				0.0054	
LTCEPEIQN	2077	AVALTCEPEIQNTTY	1930	340				0.0039	
IQNELSVDH	2078	ECGIQNELSVDHSDP	1931	392				-	
LSVDHSDPV	2079	QNELSVDHSDPVILN	1932	396				0.0820	
YGPDDPTIS	2080	NVLYGPDPTISPSY	1933	410				-	
VSAELPKPS	2081	TITVSAELPKPSISS	1934	493				-	
FTCEPEAQN	2082	AVAFTCEPEAQNTTY	1935	518				-	
VTLDVLYGP	2083	SDPVTLDVLYGPDTP	1936	582				-	
YGPDTPIIS	2084	DVLYGPDTPISPPD	1937	588				0.0037	



CEA DR 3a Motif Peptides with Binding Data

Table XXa		Exemplary						
Core Sequence	Core SeqID Num	Exemplary Sequence	SeqID Num	DR6w19	DR7	DR6w2	DR9	DRw53
IQNDTGFT	2067	QNIQNDTGFTLHV	1920	0.3600	-0.0017	-0.0009		
IKSDLVNEE	2068	LHVIKSDLVNEEATG	1921					
LVNEEATGQ	2069	KSDLVNEEATGQFRV	1922					
VNEEATGQF	2070	SDLVNEEATGQFRVY	1923					
VYPELPKPS	2071	QFRVYPELPKPSISS	1924					
FTCEPETQD	2072	AVAFCEPETQDATY	1925					
YKCEQNPV	2073	TASYKCEQNPVSAR	1926					
YGPDAPTIS	2074	NVLYGPDAPTISPLN	1927					
VYAEPKPF	2075	TITVYAEPKPFITS	1928					
VEDEDAVAL	2076	SNPVEDDAVALTCE	1929					
LTCEPEIQN	2077	AVALTCEPEIQNTTY	1930					
IQNELSVDH	2078	ECGIQNELSVDHSDP	1931					
LSVDHSDPV	2079	QNELSVDHSDPVILN	1932					
YGPDDPTIS	2080	NVLYGPDPTISPSY	1933					
VSAELPKPS	2081	TITVSAELPKPSISS	1934					
FTCEPEAQN	2082	AVAFCEPEAQNTTY	1935					
VTLDVLYGP	2083	SDPVTLDVLYGPDTP	1936					
YGPDTPIIS	2084	DVLYGPDTPISPPD	1937					



CEA DR 3b Motif Peptides with Binding Data

Table XXb

Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	Position	DR1	DR2w2B1	DR2w2B2	DR3	DR4w4	DR4w15	DR5w11	DR5w12
ATGQFRVVP	2085	NEEATGQFRVYPPLP	1938	131				-0.0027				
LNTSYRSGE	2086	ISPLNTSYRSGENLN	1939	242				-0.0027				
YTCOAHNSD	2087	SGSYTCOAHNSDTGL	1940	294				-0.0027				
LPVSPRLQL	2088	NQSLPVSPRLQLSND	1941	360				0.0071				
LSNDNRTL	2089	RQLSNDNRTLTL	1942	368	0.0001	-0.0006	-0.0007	0.3200	-0.0055		-0.0008	
LSLSCHAAS	2090	GVNLSLSCHAASNPP	1943	430				0.0075				
LNLCHSAS	2091	GANLNLCHSASNPS	1944	608				-0.0027				
ASPETHLDM	2092	RLPASPEHLDMLRH	1945	34				-0.0027				
AHNQVRQVP	2093	VLIAHNQVRQVPLQR	1946	84				0.0290				
LIDTNRSA	2094	ALTIDTNRSRACHP	1947	180				0.0350				
IHNTHLCF	2095	LALIHNTHLCFVHT	1948	465	0.0140	0.0990	0.0009	0.3100	-0.0055		0.0025	
LFRNPHQAL	2096	WDQLFRNPHQALLHT	1949	482	-0.0001	0.0015	-0.0007	0.9000	-0.0055		-0.0008	
VDLDDKQCP	2097	HSCVDLDDKQCPAEQ	1950	632				-0.0027				
YLEDVRLVH	2098	GMSYLEDVRLVHRDL	1951	832	0.0036	-0.0006	0.0150	0.1800	-0.0055		-0.0008	
IDSECRPRF	2099	CWMIDSECRPRFREL	1952	958				0.4500				
AAPQPHPPP	2100	QGGAAAPQPHPPAFS	1953	1200				-0.0025				
AAISRKMYE	2101	EFQAAISRKMYELVH	1954	104				0.0039				
LHHTLKIGG	2102	VKVLHHTLKIGGEPH	1955	284				-0.0025				
IGGEPHISY	2103	TLKIGGEPHISYPPL	1956	290				-0.0025				
AALSRKVAE	2104	EFQAAALSRKVAELVH	1957	104				0.0027				
ILGDPKKLL	2105	EDSILGDPKKLLTQH	1958	235	0.0003	-0.3006	-0.0010	0.6700	-0.0055		-0.0008	
YKQSQHMT	2106	MAIYKQSQHMTVVVR	1959	160				-0.0025				
VEGNLRVEY	2107	LIRVEGNLRVEYLLD	1960	194				0.0930				
FTLQIRGRE	2108	GEYFTLQIRGREFE	1961	325				0.0290				

Table XXb
CEA DR 3b Motif Peptides with Binding Data

Core Sequence	Core SeqID Num	Exemplary Sequence	Exemplary SeqID Num	DR6w19	DR7	DR8w2	DR9
ATQFRVYP	2085	NEEATQFRVYPPELP	1938				
LNTSYRSGE	2086	ISPLNTSYRSGENLN	1939				
YTCQAHNSD	2087	SGSYTCQAHNSDTGL	1940				
LPVSPRLQL	2088	NQSLPVSPRLQLSND	1941				
LSNDNRILT	2089	RLQLSNDNRILTLLS	1942		-0.0017	-0.0009	
LSLSCHAAS	2090	GVNLSLSCHAA SNPP	1943	0.0048			
LNLCHSAS	2091	GANLNLCHSASNPS	1944				
ASPETHLDM	2092	RLPASPETHLDMLRH	1945				
AHNQVRQVP	2093	VLIAHNQVRQVPLQR	1946				
LIDTNRSA	2094	ALTIDTNRSRACHP	1947				
IHNTHLCF	2095	LALIHNTHLFCVHT	1948	0.7500	0.0200	0.0330	
LFRNPQAL	2096	WQQLFRNPQALLHT	1949	0.0410	-0.0017	-0.0009	
VDLDDKGGP	2097	HSCVDLDDKGGPAEQ	1950				
YLEDVRLVH	2098	GMSTLEDVRLVHRDL	1951	(0.0001)	-0.0014	0.0028	
IDSECRPRF	2099	CWMIDSECRPRFREL	1952				
AAQPHPPP	2100	OGGAAPQPHPPAFS	1953				
AAISRKMVE	2101	EFQAAISRKMVELVH	1954				
LHHTLKIGG	2102	VKVLHHTLKIGGEPH	1955				
IGGEPHISY	2103	TLKIGGEPHISYPPL	1956				
AALSRKVAE	2104	EFQAAALSRKVAELVH	1957				
ILGDPKLL	2105	EDSILGDPKLLTQH	1958	0.0130	-0.0014	0.0029	
YKQSQHME	2106	MAIYKQSQHMEVVR	1959				
VEGNLRVEY	2107	LIRVEGNLRVEYLD	1960				
FTLQIRGRE	2108	GEYFTLQIRGREFE	1961				



Table XXII. Cross-reactive binding of CEA analog peptides

Source	AA	Sequence	SEQ ID NO:	A*0201 nM	A*0202 nM	A*0203 nM	A*0206 nM	A*6802 nM	No. A2 Alleles Bound
CEA.24	9	LLTFWNPPPT	2144	179	1720	67	755	-- ²	2
CEA.24M2V9	9	LMTFWNPPV	2145	4.5	782	7.7	34	3333	3
CEA.24V9	9	LLTFWNPPV	2146	16	307	26	56	952	4
CEA.78	9	QIIGYVIGT	2147	313	148	106	100	150	5
CEA.78L2V9	9	QLIGYVIGV	2158	9.4	5.9	2.3	21	2.3	5
CEA.233	10	VLYGPDAPTI	2149	128	606	270	804	--	2
CEA.233V10	10	VLYGPDAPTV	2150	26	430	16	206	952	4
CEA.411	10	VLYGPDDPTI	2151	294	358	476	7400	--	3
CEA.411V10	10	VLYGPDDPTV	2152	161	105	91	2467	--	3
CEA.569	9	YVCGIQNSV	2153	98	358	159	80	181	5
CEA.569L2	9	YLCGIQNSV	2154	50	24	12	31	3478	4
CEA.589	9	VLYGPDTPI	2155	200	878	53	638	--	2
CEA.589V9	9	VLYGPDTPV	2156	20	165	91	154	9756	4
CEA.605	9	YLSGANLNL	2157	28	165	2.4	804	--	3
CEA.605V9	9	YLSGANLNV	2158	73	13	13	80	1600	4
CEA.687	9	ATVGIMIGV	2159	36	8.8	20	11	0.80	5
CEA.687L2	9	ALVGIMIGV	2160	10	63	31	100	102	5
CEA.691	9	IMIGVLVGV	2161	69	62	13	106	89	5
CEA.691L2	9	ILIGVLVGV	2162	22	8.0	3.2	16	160	5

1) Wild-type peptides presented for reference purposes.

2) -- indicates binding affinity = 10,000nM.

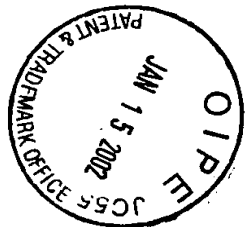


TABLE XXII A A01 Analog Peptides

<u>Peptide</u>	<u>AA</u>	<u>Sequence</u>	<u>SEQ ID NO:</u>	<u>Source</u>	<u>A*0101 nM</u>
52.0105	11	RVDGNRQIIGY	2163	CEA.72	294.1
52.0109	11	RSDSVILNVLY	2164	CEA.225	47.2
52.0113	11	HSDPVILNVLY	2165	CEA.403	25.8
52.0116	11	RSDPVTLDVLY	2166	CEA.581	7.8
57.0004	9	QQDTPGPAY	2167	CEA.87.D3	56.8
57.0007	9	AADNPPAQY	2168	CEA.261.D3	45.5
57.0008	9	ITDNNSGSY	2169	CEA.289.D3	96.2
57.001	9	VTDNDVGPY	2170	CEA.383.D3	4.1
57.0011	9	PTDSPSYTY	2171	CEA.418.D3	37.9
57.0012	9	TIDPSYTTY	2172	CEA.419.D3	3.1
57.0013	9	AADNPPAQY	2173	CEA.439.D3	44.6
57.0014	9	ITDKNSGLY	2174	CEA.467.D3	11.9
57.0103	10	PTDSPLNTSY	2175	CEA.240.D3	266
57.0104	10	PTDPSYTTY	2176	CEA.418.D3	1.1
57.0105	10	HTASNPSPQY	2177	CEA.616.T2	131.6
57.0106	10	HSDSNPSPQY	2178	CEA.616.D3	44.6



Table XXII B A03 Analog Peptides

Peptide	AA	Sequence	SEQ ID NO:	Source	A*0301 nM	A*1101 nM	A*3101 nM	A*3301 nM	A*6801 nM	A3 XRN
1371.01	10	TVSPLNTSYR	2179	CEA.241.V2	458.3	54.5	187.5	557.7	8.7	4
1371.02	10	TVSPLNTSYK	2180	CEA.241.V2K10	16.9	6.3	10588.2	-48333.3	7.3	3
1371.03	10	RVLTLTSSVTR	2181	CEA.376.V2	343.8	222.2	11.3	6041.7	666.7	3
1371.04	10	RVLTLTSSVTK	2182	CEA.376.V2K10	37.9	50	163.6	-72500	5714.3	3
1371.05	10	TVSPSYTYR	2183	CEA.419.V2	2340.4	3000	29	263.6	8.6	3
1371.06	10	TVSPSYTYK	2184	CEA.419.V2K10	68.8	42.9	3673.5	26363.6	6.7	3
1371.07	9	IVPSYTYR	2185	CEA.420.V2	91.7	13.3	25.7	58	2.6	5
1371.08	9	IVPSYTYK	2186	CEA.420.V2K9	17.2	54.5	720	4328.4	21.6	3
1371.09	10	RVLTLFNVTR	2187	CEA.554.V2	297.3	93.8	9	7631.6	42.1	4
1371.1	10	RVLTLFNVTK	2188	CEA.554.V2K10	20.8	31.6	233.8	41428.6	2352.9	3
1371.13	9	FVSNLATGK	2189	CEA.656.K9	1466.7	206.9	-36000	-72500	5.3	2



Table XXII C A24 Analog Peptides

<u>Peptide</u>	<u>AA</u>	<u>Sequence</u>	<u>SEQ ID NO:</u>	<u>Source</u>	<u>A*2401 nM</u>
52.0033	8	IYPNASLL	2190	CEA.101	176.5
52.0038	8	SWFVNGTF	2191	CEA.270	480
52.0137	11	RWCIPWQRLLL	2192	CEA.10	151.9
52.0138	11	PWQRLLLTASL	2193	CEA.14	324.3
52.0141	11	FYTLHVIKSDL	2194	CEA.119	480
52.0142	11	TYLWWVNNQSL	2195	CEA.175	85.7
52.0144	11	TYLWWVNNQSL	2196	CEA.353	46.2
52.0145	11	SYTTYRPGVNL	2197	CEA.423	218.2
52.0146	11	TYRPGVNLSL	2198	CEA.425	131.9
52.0147	11	TYLWWVNGQSL	2199	CEA.531	92.3
57.0036	9	RYCIPWQRF	2200	CEA.10.Y2F9	190.5
57.0037	9	IYPNASLLF	2201	CEA.101.F9	2.2
57.0038	9	LYWVNNQSF	2202	CEA.177.Y2F9	63.2
57.0039	9	LYGPDAPTF	2203	CEA.234.F9	63.2
57.0041	9	TYRPGVNF	2204	CEA.425.F9	52.2
57.0042	9	LYWVNGQSF	2205	CEA.533.Y2F9	15.8
57.0044	9	QYSWRINGF	2206	CEA.624.F9	109.1
57.0045	9	TYACFVSNF	2207	CEA.652.F9	8.6
57.0072	10	RYCIPWQRLF	2208	CEA.10.Y2F10	26.1
57.0073	10	FYNPPTTAKF	2209	CEA.27.Y2F10	181.8
57.0074	10	VYPELPKPSF	2210	CEA.140.F10	106.2
57.0075	10	TYQQSTQELF	2211	CEA.276.Y2	307.7
57.0076	10	VYAEPKPF	2212	CEA.318.F10	26.7
57.0077	10	YYRPGVNLSF	2213	CEA.426.F10	10
57.0078	10	QYSWLIDGNF	2214	CEA.446.F10	60
57.0079	10	SYLSGANLNF	2215	CEA.604.F10	10



Table XXIII. Immunogenicity of A2 supermotif-bearing peptides

Peptide	AA	Sequence	SEQ ID NO:	A*0201 nM	A*0202 nM	A*0203 nM	A*0206 nM	A*6802 nM	No. A2 Alleles Bound	CTL Peptide ¹	CTL Wild-type	CTL Tumor
CEA.78	9	QILGYVIGT	2216	313	148	106	100	151	5		0/3	
CEA.354	10	YLVWVNNQSL	2217	26	108	26	487	333	5		1/2	0/1
CEA.569	9	YVCGIQNSV	2218	98	358	159	80	182	5		1/2	0/1
CEA.605	9	YLSGANLNL	2219	28	165	2	804	-- ²	3		2/2	1/2
CEA.687	9	ATVGIMIGV	2220	36	9	20	11	1	5		1/1	1/1
CEA.691	9	IMIGVLVGV	2221	69	62	13	106	89	5		8/8	4/7
CEA.24	9	LLTFWNPPT	2222	179	1720	67	755	-- ²	2		0/1	0/1
CEA.24V9	9	LLTFWNPV	2223	16	307	26	56	952	4	1/1		1/1
CEA.233	10	VLYGPDPTI	2224	128	606	270	804	--	2		2/4	0/3
CEA.233V10	10	VLYGPDPTV	2225	26	430	16	206	952	4	3/4	2/2	1/4
CEA.589	9	VLYGPDPTI	2226	200	878	53	638	--	2		1/1	0/1
CEA.589V9	9	VLYGPDTPV	2227	20	165	91	154	9756	4	2/2	2/2	0/2
CEA.605	9	YLSGANLNL	2228	28	165	2.4	804	--	3		2/2	1/2
CEA.605V9	9	YLSGANLNV	2229	73	13	13	80	1600	4	4/4	3/4	1/4

1) Number of donors yielding a positive response/total tested.

2) -- indicates binding affinity = 10,000nM.

Table XXIV. MHC-peptide binding assays: cell lines and radiolabeled ligands.

A. Class I binding assays

			Radiolabeled peptide		SEQ ID NO:
Species	Antigen	Allele	Cell line	Source	
Human	A1	A*0101	Steinlin	Hu. J chain 102-110	YTAIVPLVY 2230
	A2	A*0201	JY	HBVc 18-27 F6->Y	FLPSDYFSPV 2231
	A2	A*0202	P815 (transfected)	HBVc 18-27 F6->Y	FLPSDYFSPV 2232
	A2	A*0203		HBVc 18-27 F6->Y	FLPSDYFSPV 2233
	A2	A*0206	FUN	HBVc 18-27 F6->Y	FLPSDYFSPV 2234
	A2	A*0207	CLA	HBVc 18-27 F6->Y	FLPSDYFSPV 2235
	A2	A*0207	721.221 (transfected)	HBVc 18-27 F6->Y	FLPSDYFSPV 2236
	A3		GM3107	non-natural (A3CON1)	KVFPYALINK 2237
	A11		BVR	non-natural (A3CON1)	KVFPYALINK 2238
	A24	A*2402	KAS116	non-natural (A24CON1)	AYIDNYNKF 2239
	A31	A*3101	SPACH	non-natural (A3CON1)	KVFPYALINK 2240
	A33	A*3301	LWAGS	non-natural (A3CON1)	KVFPYALINK 2241
	A28/68	A*6801	C1R	HBVc 141-151 T7->Y	STLPETYVVR 2242
	A28/68	A*6802	AMAI	HBV pol 646-654 C4->A	FTQAGYPAL 2243
	B7	B*0702	GM3107	A2 sigal seq. 5-13 (L7->Y)	APRTLVL 2244
	B8	B*0801	Steinlin	HIV gp 386-593 Y1->F, Q5->Y	FLKDYQLL 2245
	B27	B*2705	LG2	R 60s	FRYNGLIHR 2246
	B35	B*3501	C1R, BVR	non-natural (B35CON2)	FPFKYAAAF 2247
	B35	B*3502	TISI	non-natural (B35CON2)	FPFKYAAAF 2248
	B35	B*3503	EHM	non-natural (B35CON2)	FPFKYAAAF 2249
	B44	B*4403	PITOUT	EF-1 G6->Y	AEMGKYSFY 2250
	B51		KAS116	non-natural (B35CON2)	FPFKYAAAF 2251
	B53	B*5301	AMAI	non-natural (B35CON2)	FPFKYAAAF 2252
	B54	B*5401	KT3	non-natural (B35CON2)	FPFKYAAAF 2253
	Cw4	Cw*0401	C1R	non-natural (C4CON1)	QYDDAVYKL 2254
	Cw6	Cw*0602	721.221 transfected	non-natural (C6CON1)	YRHDGNNVL 2255
	Cw7	Cw*0702	721.221 transfected	non-natural (C6CON1)	YRHDGNNVL 2256
Mouse	D ^b		EL4	Adenovirus E1A P7->Y	SGPSNTYPEI 2257
	K ^b		EL4	VSV NP 52-59	RGYVFQGL 2258
	D ^d		P815	HIV-III ^b ENV G4->Y	RGPYRAFTI 2259
	K ^d		P815	non-natural (KdCON1)	KFNPMKTYI 2260
	L ^d		P815	HBVs 28-39	IPQSLDSYWTSL

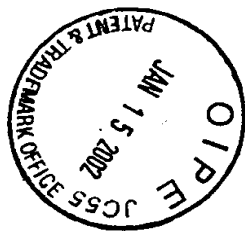


Table XXVI. Crossbinding data of A2 supermotif peptides.

Source	AA	Sequence	SEQ ID NO:	A*0201 nM	A*0202 nM	A*0203 nM	A*0206 nM	A*6802 nM	No. A2 Alleles Crossbound
CEA.24	9	LLTFWNPPT	2288	179	1720	67	755	--	2
CEA.78	9	QIIGYVIGT	2289	313	148	106	100	150	5
CEA.233	10	VLYGPDAPTI	2290	128	606	270	804	--	2
CEA.354	10	YLWVWVNNQSL	2291	26	108	26	487	67	5
CEA.411	10	VLYGPDPTI	2292	294	358	476	7400	--	3
CEA.432	9	NLSLSCHAA	2293	455	2867	1449	18500	--	1
CEA.532	10	YLWVWVNGQSL	2294	33	331	21	2056	286	4
CEA.569	9	YVCGIQNSV	2295	98	358	159	80	181	5
CEA.589	9	VLYGPDPTI	2296	200	878	53	638	--	2
CEA.605	9	YLSGANLNL	2297	28	165	2.4	804	--	3
CEA.687	9	ATVGIMIGV	2298	36	8.8	20	11	0.80	5
CEA.690	10	GIMIGVLGV	2299	64	205	31	142	500	5
CEA.691	9	IMIGVLGV	2300	69	62	13	106	89	5
CEA.691	10	IMIGVLGVA	2301	227	68	44	726	1509	3

-- indicates binding affinity =10,000nM.



Table XXVII. Immunogenicity of A2 supermotif peptides

Source	AA	Sequence	SEQ ID NO:	A*0201 nM	A*0202 nM	A*0203 nM	A*0206 nM	A*6802 nM	No. A2 Alleles Crossbound	CTL Wild-type	CTL Tumor
CEA.78	9	QIIQYVIGT	2302	313	148	106	100	151	5	0/3	
CEA.354	10	YLWWVNNQSL	2303	26	108	26	487	333	5	1/2	0/1
CEA.569	9	YVCGIQNSV	2304	98	358	159	80	182	5	1/2	0/1
CEA.605	9	YLSGANLNL	2305	28	165	2.4	804	-- ²	3	2/2	1/2
CEA.687	9	ATVGIMIGV	2306	36	8.8	20	11	0.80	5	1/1	1/1
CEA.691	9	IMIGVLGV	2307	69	62	13	106	89	5	8/8	4/7

1) Number of donors yielding a positive response/total tested.

2) -- indicates binding affinity =10,000nM.

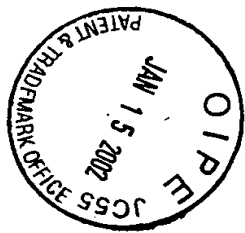


Table XXVIII. Immunogenicity A2 supermotif analog peptides

Source	AA	Sequence	SEQ ID NO:	A*0201 nM	A*0202 nM	A*0203 nM	A*0206 nM	A*6802 nM	No. A2 Alleles Crossbound	CTL Peptide ¹	CTL Wild-type	CTL Tumor
CEA.24	9	LLTFWNPPT	2308	179	1720	67	755	-- ²	2		0/1	0/1
CEA.24V9	9	LLTFWNPV	2309	16	307	26	56	952	4	1/1		1/1
CEA.233	10	VLYGPDAPTI	2310	128	606	270	804	--	2		2/4	0/3
CEA.233V10	10	VLYGPDAPTV	2311	26	430	16	206	952	4	3/4	2/2	1/4
CEA.589	9	VLYGPDTP	2312	200	878	53	638	--	2		1/1	0/1
CEA.589V9	9	VLYGPDTPV	2313	20	165	91	154	9756	4	2/2	2/2	0/2
CEA.605	9	YLSGANLNL	2314	28	165	2.4	804	--	3		2/2	1/2
CEA.605V9	9	YLSGANLNV	2315	73	13	13	80	1600	4	4/4	3/4	1/4

1) Number of donors yielding a positive response/total tested.

2) -- indicates binding affinity = 10,000nM.

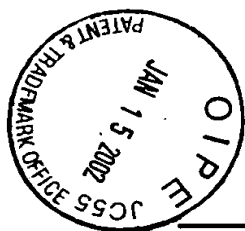


Table XXIX. DR supertype primary binding

Peptide	DR147 Algo Sum	Sequence	SEQ ID NO:	Source	DR1 nM	DR4w4 nM	DR7 nM	DR147 Cross- reactivity
39.0217	2	RWCIPWQRLLLTASL	2316	CEA.10	8.2	542	357	3
39.0218	3	QRLLLTASLLTFWNP	2317	CEA.16	--	--	--	0
39.0219	2	EVLLL VHNLPQHLFG	2318	CEA.50	2.0	52	53	3
39.0220	3	GREIYPNASLLIQN	2319	CEA.97	8.1	484	45	3
39.0221	2	EIIYPNASLLIQNII	2320	CEA.99	14	1154	156	2
39.0222	2	NASLLIQNIIQNDTG	2321	CEA.104	4546	--	--	0
39.0223	3	DTGFYTLHVIKSDLV	2322	CEA.116	69	1731	227	2
39.0224	2	YPELPKPSISSNNSK	2323	CEA.141	5556	--	--	0
39.0225	2	KPSISSNNSKPVEDK	2324	CEA.146	2381	--	7576	0
39.0226	3	YLWWVNNQSLPVSPR	2325	CEA.176	0.59	8.0	42	3
39.0227	3	LWWVNNQSLPVSPRL	2326	CEA.177	217	1552	3049	1
39.0228	2	QYSWFVNGTFQQSTQ	2327	CEA.268	192	80	926	3
39.0229	2	DTGLNRRTVTITVY	2328	CEA.305	--	--	2841	0
39.0230	2	KPFITSNNSNPVEDE	2329	CEA.324	--	--	--	0
39.0231	2	NRTLTLSSVTRNDVG	2330	CEA.375	238	--	--	1
39.0232	2	QELFISNITEKNSGL	2331	CEA.460	--	2500	--	0
39.0233	3	RTTVKTITVSAELPK	2332	CEA.488	455	7031	317	2
39.0234	2	SAELPKPSISSNNSK	2333	CEA.497	--	--	--	0
39.0235	2	LDVLYGPDTPHISPP	2334	CEA.587	--	--	--	0
39.0236	2	TQVLFIKITPNNNG	2335	CEA.637	61	--	6579	1
39.0237	2	QVLFIKITPNNNGT	2336	CEA.638	42	1875	--	1
39.0238	3	YACFVSNLATGRNNS	2337	CEA.653	208	1667	3571	1
39.0239	2	NNSIVKSITVSASGT	2338	CEA.665	91	25	676	3
39.0240	3	NSIVKSITVSASGTS	2339	CEA.666	78	25	329	3

-- indicates binding affinity =10,000nM.

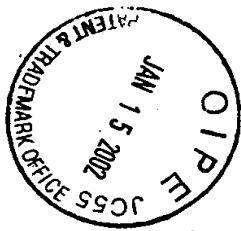


Table XXX DR supertype crossbinding

Peptide	Sequence	SEQ ID NO:	Source	DR1 nM	DR4w4 nM	DR7 nM	DR2w2B1 nM	DR2w2B2 nM	DR6w19 nM	DR5w11 nM	DR8w2 nM	DR147 Degen	Broad Degen (5/8)
39.0217	RWCIPWQRLLLTASL	2340	CEA.10	8.2	542	357	827	--	318	--	--	3	5
39.0219	EVLILLVHNLQPQLFG	2341	CEA.50	2.0	52	53	40	--	1.0	588	408	3	7
39.0220	GREIYPNASLLIQN	2342	CEA.97	8.1	484	45	24	8333	2.9	6897	5904	3	5
39.0221	EIYPNASLLIQNII	2343	CEA.99	14	1154	156	57	--	11	--	--	2	4
39.0223	DTGFYTLHVKSCLV	2344	CEA.116	69	1731	227	506	800	3889	2500	790	2	5
39.0226	YLWWVNNQSLFVSPR	2345	CEA.176	0.60	8.0	42	110	2105	2.3	29	1065	3	6
39.0228	QYSWFVNGTFQQSTQ	2346	CEA.268	192	80	926	--	6061	5833	370	--	3	4
39.0233	RTTVKTITVSAELPK	2347	CEA.488	455	7031	317	364	--	700	--	--	2	4
39.0239	NNSIVKSITVSASGT	2348	CEA.665	91	25	676	3138	--	51	--	4083	3	4
39.0240	NSIVKSITVSASGTS	2349	CEA.666	78	25	329	3957	--	76	--	2882	3	4

-- indicates binding affinity =10,000nM.



Table XXXI. DR3 binding

Peptide	Sequence	SEQ ID NO:	Source	DR3 nM
39.0313	QNIQNDTGFYTLHV	2350	CEA.110	938
39.0314	LHVIKSDLVNEEATG	2351	CEA.122	2308
39.0315	KSDLVNEEATGQFRV	2352	CEA.126	--
39.0316	SDLVNEEATGQFRVY	2353	CEA.127	--
39.0317	NEEATGQFRVYPELP	2354	CEA.131	--
39.0318	QFRVYPELPKPSISS	2355	CEA.137	--
39.0319	AVAFTCEPETQDATY	2356	CEA.162	--
39.0320	TASYKCETQNPVSAR	2357	CEA.210	--
39.0321	NVLYGPDAPTISPLN	2358	CEA.232	--
39.0322	ISPLNTSYRSGENLN	2359	CEA.242	--
39.0323	SGSYTCQAHNSDTGL	2360	CEA.294	--
39.0324	TITVYAEPPKPFITS	2361	CEA.315	--
39.0325	SNPVEDEDAVALTCE	2362	CEA.332	--
39.0326	AVALTCEPEIQNTTY	2363	CEA.340	--
39.0327	NQSLPVSPRLQLSND	2364	CEA.360	--
39.0328	RLQLSNDNRTLTLIS	2365	CEA.368	938
39.0329	ECGIQNELSDHSDP	2366	CEA.392	--
39.0330	QNELSDHSDPVILN	2367	CEA.396	3659
39.0331	NVLYGPDDPTISPSY	2368	CEA.410	--
39.0332	GVNLSLSCHAASNPP	2369	CEA.430	--
39.0333	TITVSAELPKPSISS	2370	CEA.493	--
39.0334	AVAFTCEPEAQNTTY	2371	CEA.518	--
39.0335	SDPVTLDVLYGPDTP	2372	CEA.582	--
39.0336	DVLYGPDTPHISPPD	2373	CEA.588	--
39.0337	GANLNLSCHSASNPS	2374	CEA.608	--

-- indicates binding affinity =10,000nM.

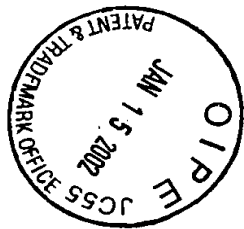


Table XXXII. HTL Candidate Epitopes

Peptide	Sequence	SEQ ID NO:	Motif	Source	DR1 nM	DR4w4 nM	DR7 nM	DR3 nM	DR2w2 B1 nM	DR2w2 B2 nM	DR6w1 9 nM	DR5w1 1 nM	DR8w2 nM	DR147 Cross-reactivity	Broad Cross-reactivity (5/8)	DR3 Binder
39.0217	RWCIPWQRLLLTASL	2375	DR sup	CEA.10	8.2	542	357	--	827	--	318	--	--	3	5	0
39.0219	EVLLLVHNLQHLFG	2376	DR sup	CEA.50	2.0	52	53	336	40	--	1.0	588	408	3	7	1
39.0220	GREIYPNASLLIQN	2377	DR sup	CEA.97	8.1	484	45	1123	24	8333	2.9	6897	5904	3	5	0
39.0313	QNIQNDTGFYTLHV	2378	DR3	CEA.110	1136	>8182	--	938	867	--	9.7	--	--	0	2	1
39.0223	DTGFYTLHVIKSDLV	2379	DR sup	CEA.116	69	1731	227	--	506	800	3889	2500	790	2	5	0
39.0226	YLWVWNNQSLPVSPR	2380	DR sup	CEA.176	0.60	8.0	42	2310	110	2105	2.3	29	1065	3	6	0
39.0328	RLQLSNDNRRTLTLIS	2381	DR3	CEA.368	--	>8182	--	938	--	--	729	--	--	0	1	1

-- indicates binding affinity = 10,000nM.

B3Cone